

spot appeared on the inner surface of the left knee, felt sore, court plaster was put on it. The next day pus was found under the plaster. Upon a physician's advice, antiseptic packs were applied to the knee and it gradually got well. On July 8th, the inside of the left side of the nose became swollen until completely closed. He then consulted a nose and throat specialist, who opened the abscess. It resulted in necrosis of the cartilage, causing the bridge to sink. July 10th, he complained of pain in right leg, this became worse with fever and chills, when his physician Dr. J. I. Clark, moved him to the hospital and asked me to help with him. Then began a series of operations, some under ether, others under local anesthesia. Wherever a metastatic process made its appearance, it was drained. Half of the bone of each patella has been curetted away. The right tibia has been opened in several places. A thrombus formed in the right internal saphenous vein, which was removed with a portion of the vein. Autogenous vaccine was used. The infection was the staphylococcus albus.

By Jan. 1st, 1914, we felt that we had pretty well won our battle over the infection. In the multitude of involvements, we had overlooked an infection of the right hip joint. Had this been aspirated, injected and extended we probably would not have had this result, but it escaped us. The openings in the tibia still continued to discharge, so in January these sinuses were curetted and followed by Beck's paste, which resulted in complete closure. In due time the boy was around. An x-ray picture showed bony ankylosis of the right hip joint. Sufficient time having elapsed to regain his strength, and all evidence of the infection having ceased for a number of months, on July 19, 1916, he was operated upon, following the usual technic. He remained at the hospital four weeks, the wound healing by primary intention. A few small pieces of bone that were not carefully wiped away in chiseling, came from the wound, causing some discharge. In eight weeks he was out of bed on his crutches, in ten weeks dispensed with his crutch and today is an active boy with good hip motion, which is gradually increasing and we think will be the equal of the left in a short time. Dr. Murphy states that maximum motion is not obtained in less than two years.

I will review very briefly the technic of the operation as taught by Dr. John B. Murphy.

The steps are as follows: The U-shaped flap includes the skin, fat and fascia lata. This begins about an inch below and to the inner side of the anterior superior iliac spine and extends just below the trochanter, ending about five inches behind the starting point. To gain more room a straight incision down the leg is made. The flap is turned upward. By means of the needle carrier, the chain saw is passed beneath the muscles from behind forward above the trochanter, down to the capsule. The trochanter is removed by sawing from above downward and outward. This is held upward out of the way, exposing the joint. The capsule is cut at a right angle to the fibers. The bony union is cut by means of the chisel. When complete, the head of the bone is rotated backward by an assistant. The acetabulum is deepened or formed with the chisel or reamer. The head of the femur is then smoothed and rounded for the joint surface. The fascia and a portion of the fat of the flap is dissected off from the point toward the base, leaving it attached at the base to give it circulation. The free end of the fascia is sutured around the acetabulum, being brought

posteriorly to the muscle removed with the trochanter. The head of the bone is rotated into the acetabulum. The trochanter is brought to its place and nailed with a finishing nail. The muscles are sutured. The flap of skin is then sutured. The patient is placed in a Travois splint to maintain abduction and with Buck's extension to hold the joint surface apart, to prevent pressure necrosis of the intervening fascia. The extension weight for an ordinarily muscled adult is twenty pounds. This is maintained for about four weeks. Then the patient is allowed up on crutches each day. They will enjoy some weight at night at this time.

After the first week a little passive motion, gradually increased, will help the muscles. As soon as the patient is out on crutches, the leg is put through the motions of walking. Depending upon the stamina of the patient the leg will be doing full duty in eight or more weeks.

Success depends upon the following factors:

1. A joint that has healed, containing no walled-off pus pockets.
2. Absolute asepsis, exceeding that of abdominal work.
3. Complete hemostasis.

AMEBIASIS: ITS RADICAL CURE WITH COMBINED EMETIN AND SAL-VARSAN PRODUCTS.*

By HERBERT GUNN, M. D., San Francisco.

For some time after the introduction of emetin hydrochloride in the treatment of amebic dysentery it was believed by many that an amebicide had been found which, if properly employed, might be expected to destroy the amebae, relieve the symptoms, and result in most cases in a cure. While it is still held by some observers that it is an amebicide, it is conceded by most that it has no effect in destroying the encysted forms and that recurrences are the rule after clearing up symptoms by its use. Further, it was shown by Allen, Baermann and others that emetin does not destroy the amebae in the intestinal tract to the extent that the amelioration of symptoms would lead one to believe. Attention has been called repeatedly to the ill effects sometimes following the use of emetin, such as muscular weakness, especially marked in the lower extremities, and often persisting for weeks after the drug has been discontinued.

My own observations in a limited number of cases had been that while the acute dysenteries were usually relieved, often very quickly, and apparently cured by the use of emetin, recurrences were the rule, amebae being demonstrable in the stools within a month and symptoms recurring within six or eight months. The impracticability of clearing the stools of amebae with reasonable doses of emetin hydrochloride was well demonstrated in several cases of this series, especially in cases No. 1, No. 4, No. 6 and No. 7.

In 1914, Winn in the Panama Canal Zone, and

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Willits in the Philippines, stated that very good results had been obtained with the use of neosalvarsan and salvarsan in both acute dysenteries and carriers. Since then occasional reports have appeared on the use of these drugs, or allied products such as arsenobenzol, in the treatment of dysentery. Some have suggested their use where emetin-resistant strains of amebae were encountered.

Since the publication of these articles, I have used neosalvarsan and emetin combined in a number of cases of *Entameba histolytica* infections, with apparently far more satisfactory results than were obtained with the use of emetin alone or by other methods.

In a series of cases an attempt was made to determine definitely whether or not it was possible with the use of emetin and neosalvarsan, salvarsan, or novarsenobenzol, to effect a radical cure, by which I mean a disappearance from the stool of motile amebae and cysts, the stool remaining clear on repeated examinations over a period of at least two months. Ordinarily cysts or motile amebae can be demonstrated in the stool within two weeks in cases where they have disappeared temporarily on account of treatment. Occasionally this time may be exceeded, and the most careful and prolonged search will be negative up to thirty days, rarely longer.

In Case 2 of this series the stool was negative on the 36th day, but only one cover-slip preparation was examined, which is sufficient for practical purposes but which is not enough of an examination to give absolute data. In practically all the examinations made in this series, amebae and cysts were found on the first cover-slip examination, if found at all; but in most of the cases several cover-slip preparations were examined before pronouncing the specimen negative. The stools, usually liquid as a result of salts, were examined practically immediately after passage, thermos bottles being used to keep them warm when transported. Several patients who left shortly after the conclusion of treatment have remained well, according to reports, but these are not included on account of lack of absolute data. Several other cases are at present under treatment, but sufficient time has not elapsed to include them.

The salvarsan, neosalvarsan and novarsenobenzol were used intravenously, and the preparation of emetin was the hydrochloride, in tablets or ampules, manufactured by Burroughs & Wellcome, and was given hypodermically.

In all of the acute cases noted, entire recovery from all symptoms resulted; in most of the chronic cases recovery from symptoms was complete or partial.

In nine of the 21 cases herein reported the disease was contracted in California. In most of the rest it originated in the Philippines, Guam, Java, Mexico, Central or South America.

Case 1. Acute type, originating in California. Two and one-half years ago received a desultory course of emetin treatment over a period of about one month, being given about 17 injections, totaling 10 grains. All symptoms were relieved and

the stool was free from amebae a few days after the end of treatment. Six months later symptoms recurred and he was given 2/3 grain of emetin hydrochloride three or four times weekly over a period of four months, about 54 injections with a total of about 36 grains of the drug. After remaining well for about seven months, symptoms again recurred. The patient then administered the drug to himself and took about 84 injections of 2/3 grains each, a total of 56 grains, over a period of about seven months. Two and one-half months later a mild recurrence of symptoms brought the patient under my observation. Up to that time he had received about 155 injections, representing about 102 grains of emetin hydrochloride, the preparations used being either the tablets or ampules of Burroughs & Wellcome. The patient was then given emetin hydrochloride Gr. 1 daily for ten days, followed by neosalvarsan 0.6 Gm. and supplemented by 4 grains of emetin during the next eight days, a total of 14 grains of emetin and 0.6 Gm. neosalvarsan during this course.

Four days after cessation of treatment, actively motile amebae were present in the stool.

Four days later salvarsan 0.4 Gm. was given, and two days later the stool was negative for amebae or cysts.

Seven days after the administration of salvarsan actively motile amebae were again present in the stool.

Emetin treatment was again instituted and given for 13 consecutive days in 1 grain doses, followed by salvarsan 0.6 Gm. and supplemented by three days of 1 grain each of emetin, a total of 16 grains of emetin and salvarsan 0.6 Gm.

During this course the stool contained motile amebae and cysts after the fifth day of emetin, and was negative for motile amebae or cysts after the ninth grain of emetin. There was considerable muscular weakness, especially in the lower extremities, during the administration of the emetin, which passed off entirely within a month of its discontinuance.

The subsequent history of the patient is as follows: Health perfect. Stool examinations negative for amebae or cysts on the 5th, 10th, 16th, 23rd, 28th, 35th, 45th, 64th, 110th, 208th, 388th and 418th day after treatment was stopped.

Case 2. Chronic type, 13 years duration, originating in Philippine Islands.

In this case an attempt was first made to eradicate the amebae with neosalvarsan alone. Four months prior to this the patient had received emetin hydrochloride as a therapeutic test, being given 3 1/2 grains over a period of seven days.

Twenty-four hours after the administration of the first 0.6 Gm. neosalvarsan the stool was free from motile amebae but contained cysts.

On the ninth day motile amebae and cysts were present.

On the tenth day neosalvarsan 0.9 Gm. was given.

The stool was negative for amebae and cysts on the second and fifth day after this injection, and on the eighth day neosalvarsan 0.9 Gm. was repeated.

On the fourth and eleventh days after the last injection cysts were demonstrable in the stools, and on the fifteenth day motile amebae were present.

Emetin hydrochloride and neosalvarsan were then administered, 19 grains of emetin and two doses of neosalvarsan (0.9 Gm. each) being given over a period of 23 days.

Following treatment the stool examination showed no amebae or cysts on the twelfth day, cysts on the twentieth day, and motile amebae on the twenty-fifth day.

Treatment was immediately resumed, emetin hy-

drochloride Gr. 1 being given for eleven consecutive days, followed by salvarsan 0.6 Gm. and one more dose of emetin Gr. 1 the next day, a total of 12 grains of emetin hydrochloride and 0.6 Gm. salvarsan.

During this course of treatment the stool was negative for amebae or cysts on the seventh day, that being the only stool examination made.

Following this course the stool was negative for amebae or cysts on the eighth day and contained motile amebae and cysts on the twelfth day.

Treatment was immediately resumed, salol coated ipecac Gr. 10, 30, 45 and 20, respectively, being given on four consecutive days.

Following this treatment the stool showed no amebae or cysts on the 8th, 14th, 22nd and 36th days. On the 56th day amebae and cysts were present.

Treatment was immediately resumed, beginning with neosalvarsan 0.6 Gm., followed by emetin Gr. 1 daily for four days, then a second neosalvarsan 0.6 Gm., followed by emetin Gr. $\frac{1}{2}$ daily for four days, and ending with a third neosalvarsan 0.6 Gm., a total of 6 grains of emetin and three doses of neosalvarsan, 0.6 Gm. each, during this course.

On the seventh day following, the stool was free of amebae or cysts, on the twentieth day cysts were present, and on the forty-eighth day motile amebae and cysts were demonstrated.

Treatment was soon resumed, and during a course of twenty days, 8 grains of emetin hydrochloride and 4 neosalvarsans (0.6 Gm. each) were given.

A month and a half later, when the stool was next examined, motile amebae were present.

A few weeks later a course of emetin bismuth iodide in keratin coated tablets was given, three 1-grain tablets being administered daily for fourteen consecutive days.

Twenty-eight days later the stool contained motile amebae.

A second attempt to administer this drug had to be abandoned after a few days on account of the severe vomiting produced.

No disagreeable symptoms resulted from the first course, when neosalvarsan alone was used. During the period when the courses of 19 grains and 12 grains of emetin were used and after the ipecac treatment, very severe prostration and marked muscular weakness were evident. Following the last 6-grain course of emetin there was no discomfort.

At present the general condition is excellent, much better than it was prior to the beginning of the first treatment.

Most of the treatment was carried on at the office, the patient being in the hospital during the course of emetin bismuth iodide.

This case has proved to be the most intractable to this method of treatment that I have thus far encountered, and had my observations been limited to it, the method doubtless would have been discarded.

Case 3. Acute type, originating in Central America. Four months pregnant. Eight to ten bowel movements daily; tormina and tenesmus; blood and mucus discharges.

Emetin hydrochloride in $\frac{1}{8}$ or $\frac{1}{2}$ grain doses was given daily for eleven days, during which time considerable amelioration of symptoms resulted. After an intermission of four days the dose was increased to $\frac{3}{8}$ or 1 grain daily for fifteen days, a total of 14½ grains being given over a period of thirty days. During the height of the treatment there was slight dizziness, considerable muscular weakness in the lower extremities, and increased pulse rate.

The stool showed motile amebae after the administration of 4 grains of emetin, cysts after 9½ grains had been taken, and was free of cysts two days after the end of the course, three cover-slip

preparations being examined. Eighteen days after the end of treatment cysts were demonstrated in the stool, and eight days later (twenty-six days after the termination of the emetin treatment) motile amebae were present in the stool. The patient's condition was very good.

Treatment was resumed, Gr. 1 emetin being given daily for nine days, followed by neosalvarsan 0.6 Gm.

The subsequent history is as follows: Health perfect. A normal full-term delivery. Stool examinations were negative for amebae or cysts on the 20th, 32nd, 49th, 85th and 196th day after stopping treatment.

Case 4. Chronic type, originating in California. Intermittent diarrhea and digestive disturbances.

Emetin hydrochloride was given daily for 17 days in 1-grain doses, a total of 17 grains, and two days later 0.4 Gm. salvarsan.

Motile amebae and cysts were present in the stool all through the emetin treatment, being demonstrated on the 6th, 10th and 15th day, and on the morning that the salvarsan was given.

The day following administration of salvarsan the examination of the stool was negative for amebae or cysts.

There was considerable muscular weakness in the lower extremities during the latter part of the treatment, which gradually cleared up and was practically gone within three weeks.

The subsequent history is as follows: Health greatly improved. All symptoms relieved except slight flatulence occasionally. Stool examinations were negative for amebae or cysts on the 1st, 5th, 9th, 12th, 26th, 35th, 49th and 61st day after discontinuance of treatment.

Case 5. Chronic type with constipation, originating in California.

Emetin hydrochloride was given Gr. 1 daily for seven days, followed by 20 grains of ipecac (salol coated) daily for two days.

Two doses of neosalvarsan 0.6 Gm. were given, one after the fourth dose of emetin and one the day following the last ipecac treatment.

The stool was negative for amebae or cysts at the end of the emetin treatment. There was very little prostration and muscular weakness resulting from the treatment, and the symptoms were practically all cleared up shortly afterward.

The subsequent history is as follows: Health greatly improved. The examinations of the stools were negative for amebae or cysts on the 15th, 22nd, 36th, 50th, 86th and 166th day after the termination of treatment.

Case 6. Subacute variety, originating in South America.

Emetin hydrochloride was given in 1-grain doses for eleven consecutive days, and on the following day 0.45 Gm. neosalvarsan was administered.

Following the treatment there was considerable muscular weakness, especially in the lower extremities, which lasted for several weeks.

Amebae were still present in the stool after the seventh and tenth doses of emetin had been given.

The subsequent history is as follows: Improvement was slow but definite, although recurrence resulted as noted below. Stool examinations were negative for amebae or cysts on the 6th and 12th days. Cysts were demonstrated on the 18th day. The stools were negative for amebae or cysts on four subsequent examinations, made on the 24th, 32nd, 45th and 107th day. On the 143rd day motile amebae and cysts were again present.

Case 7. Chronic type. Origin unknown.

Emetin hydrochloride in 1-grain doses was given daily for five days, when neosalvarsan 0.45 Gm. was administered followed by emetin for seven days, during which time 5 grains were given, a total of 10 grains of emetin.

On the day neosalvarsan was administered, when

5 grains of emetin had been taken, amebae and cysts were present in the stool.

Three days later the stool was negative for amebae or cysts. Very slight muscular weakness could be ascribed to the treatment.

Subsequent history: No improvement in patient's condition. Marked neurasthenia present. The stool examinations were negative for amebae or cysts on the 3rd, 10th, 20th, 31st, 55th, 80th, 101st, 128th and 252nd day after the last treatment.

Case 8. Subacute type, originating in California.

The patient received in all, over a period of two weeks, 9 grains of emetin, two neosalvarsan 0.6 Gm., and 30 grains of ipecac, salol coated. The treatment was well borne and produced very little prostration. Most of the symptoms were relieved during the course.

Subsequent history: Health greatly improved. Stool examinations negative for amebae or cysts on the 3rd, 12th, 19th, 26th, 39th, 53rd and 97th days after last treatment.

Case 9. Subacute type, originating in California.

During a period of eleven days the patient took in all 8 grains of emetin, one dose of 25 grains of ipecac, and two doses of neosalvarsan (0.6 Gm. each).

The treatment was well tolerated, only slight muscular weakness being complained of.

The subsequent history is as follows: General health good; practically all symptoms relieved. The stool examinations were negative for amebae or cysts on the 8th, 15th, 28th, 38th, 47th, 61st, 92d and 177th days after the end of treatment.

Case 10. Chronic type, originating in Central America. Child of 15.

Emetin hydrochloride Gr. 1/3 was given daily for four days, then Gr. 1/6 daily for six days. Alcresta ipecac tablets Gr. V were also used after the 8th day, two tablets being given twice daily for six days. The total amount of emetin given was 2 1/3 grains in ten days and 24 tablets of alcresta ipecac, the equivalent, as claimed by its manufacturers, of 240 grains of ipecac.

During this treatment motile amebae were always demonstrable in the stools.

Emetin hydrochloride was then given in doses of 2/3 grains daily for three days, with neosalvarsan 0.6 Gm. on the fourth day, and emetin 2/3 grains daily again for six more days, followed by a second dose of neosalvarsan 0.6 Gm.

During this second course of treatment 6 grains of emetin and two injections of neosalvarsan, 0.6 Gm. each, were administered over a period of eleven days. Practically no discomfort resulted from the treatment.

The stool was negative for amebae or cysts the day after the first neosalvarsan was given.

The subsequent history is as follows: Health improved. The stool examinations were negative for amebae or cysts on the 2d, 13th, 20th, 30th, 44th and 89th days after termination of treatment.

Case 11. Subacute type, originating in California.

Received 9 1/2 grains of emetin hydrochloride during ten days, followed by two days of ipecac Grs. 10 and 20 respectively.

At the end of treatment, and three days later, the stool was negative for amebae or cysts. On the fourth day after treatment amebae and cysts were demonstrated.

Alcresta ipecac tablets were then given: 3 on the first day, 9 on the second, 9 on the third, 6 on the fourth, and 3 tablets on the fifth day; a total of 30 tablets or, as claimed by the manufacturers, the equivalent of 300 grains of ipecac. The alcresta tablets had to be discontinued on account of the diarrhea, with tormina and tenesmus, which resulted.

Motile amebae were demonstrated in the stool on the 3d and on the last day of taking this preparation.

Emetin hydrochloride was then given in 1 grain doses daily for eight days, with neosalvarsan 0.6 Gm. on the second day while receiving emetin, and again on the day following the last emetin injection.

All symptoms were relieved within two or three days of beginning this last course of treatment. There was considerable muscular weakness resulting, lasting for several weeks.

The subsequent history is as follows: Considerable improvement in health. The stool was negative for amebae or cysts on the 14th, 23d, 25th, 50th, 77th, 79th, 161st and 341st days after treatment.

Case 12. Chronic type, originating in Mexico.

Two years and a half ago was given emetin hydrochloride Gr. 1/3 daily for seven days, then Gr. 1/3 every other day for ten days, a total of 4 grains during a period of seventeen days.

In the middle of this course, material obtained during a sigmoidoscopic examination was negative for amebae.

The patient was lost sight of for a year, and on returning with recurrence, was two months pregnant.

Emetin hydrochloride was given daily in 1 grain doses for three days, then neosalvarsan 0.6 Gm., then emetin Gr. 1 daily for two days, and Gr. 1/2 for two more days, concluding with a second dose of neosalvarsan 0.6 Gm. on the following day; a total of 6 grains of emetin and two 0.6 Gm. doses of neosalvarsan during this course.

Great improvement in the general condition resulted from the treatment, and practically no prostration.

No re-examination of the stool was made until the 27th day after the termination of treatment, when motile amebae and cysts were demonstrated.

Treatment was resumed, and during a period of five days, 5 1/2 grains of emetin hydrochloride and one neosalvarsan 0.6 Gm. were given.

Forty-four days later (the next examination made) amebae were present in the stool. Later on, when pregnancy was well advanced, a mild recurrence of symptoms was controlled by a course of emetin hydrochloride. Pregnancy went to full term with normal delivery. A few months later mild dysenteric symptoms recurred, and treatment is about to be resumed.

Case 13. Chronic type.

During a period of twelve days was given emetin hydrochloride Grs. 12 and 1 neosalvarsan 0.6 Gm.

The stools were negative for amebae or cysts on the 10th, 30th, 57th, 89th and 200th days after termination of treatment.

Case 14. Chronic type, originating in California.

During the course of ten days, 8 grains of emetin hydrochloride and 1 neosalvarsan 0.6 Gm. were given.

Great improvement in the patient's condition resulted and the stool was negative for amebae or cysts on six examinations extending over a period of 105 days.

Case 15. Chronic type, contracted in the Philippine Islands 13 years ago.

During a period of 14 days, 9 grains of emetin hydrochloride and 2 neosalvarsan (0.6 Gm. each) were given.

Very little improvement in the patient's condition resulted. Achylia gastrica was present.

The stools were negative for amebae or cysts on the 2d, 7th, 17th, 51st, 63d, 92d, 119th and 159th days following termination of treatment.

Case 16. Chronic type, contracted in California.

During a course of 14 days, emetin hydrochloride Grs. 12, and 1 neosalvarsan 0.4 Gm., and 1 novarsenobenzol 0.6 Gm. were given.

Great improvement in condition resulted. The stools were negative for amebae or cysts on four examinations over a period of sixty days.

Case 17. Chronic type, contracted in California. During a course of treatment lasting twelve days, 10 grains of emetin hydrochloride and 2 doses of novarsenobenzol (0.6 Gm. each) were given.

Marked improvement in condition resulted, and the stools were negative on four re-examinations over a period of sixty days.

Case 18. Chronic type, contracted in Java.

During fifteen days' treatment, 11½ grains of emetin hydrochloride and 1 neosalvarsan, 0.6 Gm., were given.

The stools were negative on seven re-examinations over a period of eighty days.

Case 19. Chronic type, contracted in Central America.

During a period of fourteen days, 7 grains of emetin hydrochloride and 2 doses of novarsenobenzol (0.5 Gm. each) were given.

The stool was negative on four re-examinations over a period of sixty days.

Case 20. Chronic type, contracted in Philippines 10 years ago.

During a 12 days' course, emetin hydrochloride Grs. 11 and 1 neosalvarsan 0.6 Gm. were given.

The stool showed amebae 11 days later.

Twenty-three days after the termination of the first course of treatment a second course was given, which lasted 13 days, during which 9 grains of emetin hydrochloride and 1 novarsenobenzol 0.6 Gm. and 1 neosalvarsan 0.6 Gm. were given.

On the tenth day following the end of treatment the stool was negative for amebae or cysts.

On the 19th and 31st days cysts were present. At the next examination, two months later, motile amebae and cysts were demonstrated.

Case 21. Chronic type, contracted in Guam.

The patient, a girl five years of age, was given 3 grains of emetin hydrochloride and 1 novarsenobenzol 0.2 Gm. during a period of thirteen days.

Only three re-examinations have been made over a period of sixty days, all being negative.

SUMMARY.

Results of Combined Treatment.

Case No.	Duration of treatment, No. days.	Total amt. drugs used during course of treatment.				Stool examinations subsequent to treatment		Results	Remarks
		Emetin hydrochloride, grains.	Neosalvarsan, Gms.	Salvarsan, Gms.	Novarsenobenzol, Gms.	No.	Extending over No. days.		
1	19	14	0.6			12	418		
2	17	16	0.6						
	23	19	1.8						
	13	12	0.6						
	11	13	1.8						
3	20	8	2.4			5	196	Uncured	4 mos. pregnant
	10	9	0.6						
4	19	17		0.4		8	61		
5	11	7	1.2			6	166		
6	12	11	0.45			9	252	Uncured	
7	13	10	0.45			7	97		
8	14	9	1.2			8	177		
9	11	8	1.2			6	89		
10	11	6	1.2						15 yrs. age
11	10	8	1.2			8	341	Uncured	Pregnant
12	9	8	1.2						
13	5	5½	0.6			5	200		
14	12	12	0.6			6	105		
15	10	8	0.6			8	159		
16	14	9	1.2			4	60		
17	14	12	0.4		0.6	4	60		
18	12	10			1.2	4	60		
19	15	11½	0.6			7	80		
20	14	7			1.0	4	60		
21	12	11	0.6					Uncured	5 yrs. age
	13	9	0.6		0.6	3	60		
	13	3			0.2				

Note:—All cured except those marked uncured.

Total number of cases treated..... 21
Total number of cases cured..... 17
Percentage of cures..... 80

If cases Nos. 6, 12 and 20, which have received only one or two courses of combined emetin and arsenic treatment, are omitted from these figures as incompletely treated, it would materially alter the percentage of cures shown:

Total number of cases treated (to completion) 18
Total number of cases cured..... 17
Percentage of cures..... 94

Number of cases cured in one course of emetin and arsenic treatment..... 16
Number of cases cured in two courses of emetin and arsenic treatment..... 1

Total cured..... 17

Number of cases uncured after 1 course of treatment 1
Number of cases uncured after 2 courses of treatment 2
Number of cases uncured after 4 courses of treatment 1

Total uncured..... 4

Average duration of course of treatment.. 13 days

Average number stools re-examined after treatment 6.5

Average time under observation after treatment 151 days

At the present time I am using less emetin and more neosalvarsan; the emetin is discontinued if symptoms of muscular weakness supervene, and even if well tolerated not over 10 grains are given in a course; the neosalvarsan is administered after four or five doses of emetin have been given and is repeated at or near the end of the emetin course. Following the treatment the stool is carefully examined at regular intervals, and immediately upon the reappearance of cysts or amebae the course of treatment is repeated.

No ill effects from the use of neosalvarsan or novarsenobenzol have been observed in any case, and the results following their use seem to be as good as with salvarsan, which produced a much greater reaction.

CONCLUSIONS.

It would appear from my observations that a radical cure of amebiasis can be effected but rarely with emetin hydrochloride alone, which is the consensus of opinion at the present time. From a very limited number of observations, the same would seem to be the case with salvarsan and neosalvarsan used alone.

The combined use of emetin hydrochloride and salvarsan, neosalvarsan, or novarsenobenzol may be expected to produce a radical cure in a large proportion of cases if the arsenic compound is injected while the patient is well under the influence of the emetin. The treatment as carried out by this method is far more rapid, less severe, and apparently much more efficacious than with most of the old methods of treatment.

240 Stockton Street.